

REMARKS

I. Status of Claims

Claim 21 was previously canceled. Claims 1-20 are currently pending and stand rejected. Claim 10 has been amended herein to read "at a pressure ...", not "at a pressure ..." to overcome the claim objection. Office Action, paragraph 3.

II. Rejection under 35 U.S.C. § 102(b)

Claims 1-3, 8 and 9 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,578,388 to Faita et al. ("Faita") for reasons discussed at pages 2-3 of the Office Action. Applicants respectfully traverse this rejection for at least the reasons that follow.

To establish a rejection under 35 U.S.C § 102(b), the Examiner must demonstrate that the reference teaches each and every claim element. See M.P.E.P § 2131. "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). In the present case, Faita fails to anticipate claims 1-3, 8 and 9, at least because the reference fails to direct those skilled in the art to the subject matter recited in the claims without any need for picking, choosing, and combining various disclosures. *In re Arkley*, 455 F.2d 586, 587 (C.C.P.A. 1972).

The Examiner states that Faita teaches "a membrane fuel cell delimited by bipolar plates and having anodic and cathodic compartments (abstract, column 1 lines 10-12)" and "[t]he compartments have means for feeding air and fuel (Figure 3)." Office Action at page 3. Faita, however, fails to teach or suggest the limitations "said cathodic

compartment comprising means for feeding air from the bottom to the top" and "said anodic compartment comprising means for feeding a hydrogen-containing fuel from the top to the bottom" recited in claim 1. The Examiner then appears to attempt to justify this lack of explicit disclosure by arguing "[a]s to the direction of flow, this is relative to the orientation of the fuel cell." *Id.*

This reasoning falls far short of the burden required to establish anticipation because the Examiner has not shown that the fuel cell of *Faita* is ever required to be in an orientation that would necessitate a means for feeding air from the bottom to the top and a means for feeding a hydrogen-containing fuel from the top to the bottom. The Examiner cannot pick and chose possible fuel cell orientations, not explicitly disclosed in the reference, to support an anticipation rejection. Rather, the claimed subject matter must be identically described or disclosed in the prior art. *In re Arkley*, 455 F.2d at 587.

Moreover, regardless of the fuel cell orientation, the presently claimed invention is directed to a counter-current flow system with a "means for feeding air from the bottom to the top" and "a means for feeding a hydrogen-containing fuel from the top to the bottom." See, e.g., claim 1. *Faita* does not teach, suggest or infer any counter-current flow system, let alone the claimed counter-current system of feeding air from the bottom to the top and feeding a hydrogen-containing fuel from the top to the bottom. Thus the anticipation rejection fails to meet the requirement that "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim."

Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir. 1989).

For at least these reasons, the anticipation rejection under 35 U.S.C § 102(b) is improper and Applicants respectfully request that it be withdrawn.

III. Rejections under 35 U.S.C. § 103(a)

A. Claims 4-7

Claims 4-7 were rejected under 35 U.S.C. § 103(a) as being obvious over Faita in view of U.S. Patent No. 6,627,035 to Fan et al. ("Fan") for reasons discussed at pages 3-4 of the Office Action. Applicants respectfully traverse this rejection for at least the reasons that follow.

Neither Faita nor Fan teach all of the claim limitations. As shown in the above arguments concerning anticipation, Faita does not teach or suggest at least the following claim limitations: "said cathodic compartment comprising means for feeding air from the bottom to the top" and "said anodic compartment comprising means for feeding a hydrogen-containing fuel from the top to the bottom." Fan does not cure the deficiencies of Faita because Fan teaches a process of making a gas diffusion electrode without describing the required components of the claimed fuel cell.

Also, one of ordinary skill in the art would not look to Faita as a starting point to arrive at the claimed invention, because Faita does not teach or suggest that the flow directions of the reactants and products may be counter-current. In addition, Faita guides the skilled artisan reading this document away from the claimed air flow direction. Faita teaches "preferably the products outlet should be localized in the lower part to permit an easier purging of the condensate water which may be formed in the cell during operation" (col. 8, ll. 33-37), which would require the air to flow from the top to the bottom, the exact opposite air flow direction required by the claims. The rejection is thus improper and Applicants respectfully request that it be withdrawn.

B. Claims 10-20

Claims 10-20 were rejected under 35 U.S.C. § 103(a) as obvious over Faita in view of U.S. Patent Publication No. 2003/0232231 to Stute et al. ("Stute") and WO 00/63992 to Brambilla et al. ("Brambilla") for reasons discussed at pages 4-5 of the Office Action. Applicants respectfully traverse this rejection for at least the reasons that follow.

Neither Faita nor Stute nor Brambilla teach all of the claim limitation. As shown in the above arguments, Faita does not teach or suggest the claim limitations, "said cathodic compartment comprising means for feeding air from the bottom to the top" and "said anodic compartment comprising means for feeding a hydrogen-containing fuel from the top to the bottom." Stute does not cure the deficiencies of Faita because Stute teaches a process of supplying air to the fuel cell without describing the required components of the claimed fuel cell. Nor does Brambilla cure the deficiencies of Faita because Brambilla teaches the flow circulation occurs on the depressed portions of the bipolar plate (Fig. 2B, Item 11 and Page 9, Lines 18-21) and does not teach or suggest the claimed flow directions.

Also, one of ordinary skill in the art would not look to Faita as a starting point to arrive at the claimed invention because Faita does not teach or suggest that the flow directions of the reactants and products may be counter-current. As mentioned above, Faita guides the skilled artisan away from the claimed invention by teaching that an embodiment requires the air to flow from the top to the bottom, the exact opposite flow direction required by the claims. The rejection is thus improper and Applicants respectfully request that it be withdrawn.

IV. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

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By: 

Mark D. Sweet
Registration No. 41,469